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ABSTRACT

Three principal factors that apply equally to language and content teachers are the focus on an integrated approach to teaching limited English proficient (LEP) students in grades 6 through 12. They are: (1) the use of multiple media; (2) the enhancement of students' thinking skills; and (3) student-centered organization of instruction. Strategies and techniques are described for preparing for the integrated approach, helping the LEP student adjust to the classroom, adjusting teaching style, teaching multilevel classes, motivating students and providing background knowledge, adapting traditional ESL techniques to the content classroom, meeting the students' cognitive academic needs, and checking student comprehension of the content. Suggestions are offered for developing lesson plans, including a lesson plan format and sample lessons. Contains 8 references. (LB)

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Integrating Language and Content Instruction: Strategies and Techniques

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Introduction

The number of limited English proficient (LEP) students in American schools for school year 1989–90 was estimated at approximately 1,927,828, which represented around 5.2 percent of all students in school (U.S. Department of Education, 1991). The previous school year (1988–89), the percentage of LEP students in U.S. schools was estimated at about 4.6 percent (U.S. Department of Education, 1991). The increase in LEP students has been dramatic in many areas of the country. This rapid growth implies that many teachers are finding an increasing number of students in their classrooms who have to master content matter in a language that is still in the process of being learned. Research indicates that the academic language utilized in content areas acts as a barrier to the success in school of many LEP students (Cummins, 1981). Postponing content instruction until these LEP students master English sufficiently to keep pace with their English-speaking peers often results in underachievement and eventual school leaving.

Current research in second language acquisition indicates that a critical element in effective English as a second language instruction is access to comprehensible input in English (Krashen & Biber, 1988). One way to provide comprehensible input directly to the LEP student is by teaching content in English using strategies and techniques that make the content comprehensible to the second language learner. Research confirms that students in classes where such strategies and techniques are employed acquire impressive amounts of English and learn content matter as well (Krashen & Biber, 1988). It has been long known that a second language can be effectively learned when it is the medium of instruction, not the object (Lambert & Tucker, 1972; Campbell, Gray, Rhodes & Snow, 1985).

The philosophical basis underlying language and content integration is that a child's whole education is a shared responsibility distributed among all teachers. The integration of language and content involves the incorporation of content material into language classes as well as the modification of language and materials in order to provide for comprehensible input to LEP students in content classes. The former is often referred to as content-based language instruction; the latter can be referred to as language-sensitive content instruction. An integrated approach bridges the gap that often separates the language and the content classrooms. By utilizing an integrated approach, LEP students can begin academic studies earlier. Such an approach increases the understanding of subject matter by LEP students, which facilitates their academic success. At the same time, the LEP students are able to increase their proficiency levels in the English language.

An Integrated Language and Content Approach

The approach presented here focuses on three principal factors which apply equally to the language and the content teachers:

(1) the use of multiple media;

(2) the enhancement of the students' thinking skills; and

(3) student-centered organization of instruction.

In order to make English language input as comprehensible as possible, the teachers should present information through diverse media: realia, graphs, demonstrations, pre-reading, and pre-writing strategies. The focus of the instruction should be motivated by the content to be learned which will help identify the language skills required to learn that content, and the reasoning abilities needed to manipulate it (analyzing, synthesizing, and evaluating). Instruction should be student-centered where the teacher has the role of facilitator with the goal of increasing student-to-student interaction.

Content and language instruction can be integrated at any level. The focus here will be on middle and high schools (grades 6–12).

Strategies and Techniques

The following guidelines, strategies and techniques are for middle and high school language and content teachers who wish to use an integrated approach in their classes. Many of these are things that good teachers do naturally; however, it is worth enumerating them here so that their relationship to integrated instruction is explicit. The list is not exhaustive; rather it reflects activities teachers can incorporate as they begin to integrate language and content instruction. Teachers may find that adaptations of techniques they currently use will be appropriate to an integrated approach as well.

Several of the strategies and techniques described below are used in the model lesson plans that follow. These lesson plans describe language and content objectives, the thinking/study skills that may be addressed, the general theme and vocabulary, the necessary materials, the basic procedure, and extension activities for enrichment or other uses.

Preparing for the Integrated Approach

The following sequential steps are recommended during the planning of integrated instruction. *Close cooperation between content and language teachers* is key to effective instruction.

Observe classrooms

The language teacher should see what academic language and instructional methods and materials the content teacher is using, while the

content teacher can see which strategies the language teacher uses with LEP students.

Collaborate with colleagues

Working together, language and content teachers should identify the language and/or academic difficulties and demands that particular subjects or courses may present for LEP students. Some examples of those demands are:

- reading textbooks
- completing worksheets
- writing reports
- doing library research
- solving mathematical and scientific word problems
- using rhetorical styles in essays (e.g., cause and effect, compare and contrast, argue and persuade).

Examine the content material

The teachers should identify specific problems LEP students may have with the material in advance. Such problems do not result solely from the complexity of the passages, but from factors like the skills needed to complete accompanying exercises.

Select a theme

The teachers can develop several lessons around a theme. The theme should be addressed in the language and content classes. For example, an environmental theme, such as deforestation, might be the focus of ESL and science lessons. (The model lessons that follow are designed around themes.)

Identify objectives of the unit

While developing the curriculum and syllabus for a course, teachers should keep in mind the specific objectives and adjust the material accordingly in order to eliminate extraneous detail which may confuse a LEP student.

Identify key terms and words

Key terms can be pulled out and introduced in advance. The teachers should reinforce the new vocabulary throughout the lesson. Of particular interest are words which can clue students in to what is expected of them, such as the terms *altogether, more,* and *less* in math word problems and *contrast* in expository writing.

Look for appropriate text materials

The language teacher can choose content passages which illustrate the language structures or functions being taught. The content teacher can look for alternate versions of general textbooks which present the subject

matter more clearly for LEP students or can adapt materials to suit the language proficiency level of the students.

Adapt written materials

If a lesson objective is to present new content information to LEP students, it is important to make materials more comprehensible to the LEP students. (How to do this is discussed below.)

Helping the LEP Student Adjust to the Classroom

LEP students are still learning English and the style of the American education system, so teachers should take this into consideration when presenting information.

Announce the lesson's objectives and activities

It is important to write the objectives on the board and review them orally before class begins. It is also helpful to place the lesson in the context of its broader theme and preview upcoming lessons.

Write legibly

Teachers need to remember that some students have low levels of literacy or are unaccustomed to the Roman alphabet.

Develop and maintain routines

Routines will help LEP students anticipate what will happen (e.g., types of assignments, ways of giving instructions) without relying solely on language cues.

List and review instructions step-by-step

Before students begin an activity, teachers should familiarize them with the entire list of instructions. Then, teachers should have students work on each step individually before moving on to the next step. This procedure is ideal for teaching students to solve math and science word problems.

Present information in varied ways

By using multiple media in the classroom, teachers reduce the reliance on language and place the information in a context that is more comprehensible to the students.

Provide frequent summations of the salient points of the lesson

Teachers should:

- try to use visual reviews with lists and charts;
- paraphrase the salient points where appropriate; and
- have students provide oral summaries themselves.

Adjusting Teaching Style

It is important to provide LEP students with ample opportunities for interaction and participation in the classroom. Teachers should not rely on a lecture approach. They should be more conscious of their own speech patterns and tolerant of their students' mistakes.

Develop a student-centered approach to teaching and learning

Teachers need to become facilitators and let students assume more responsibility for their learning. When activities are planned that actively involve students in each lesson, the students can better process the material presented and acquire the language as well.

Reduce and adjust teacher talk

Increasing the amount of student communication about the subject matter is important.

- Allow students more time to speak.
- Concentrate on talking about the subject material rather than about classroom discipline.
- Be prepared to rephrase questions and information if the students do not understand the first time.

Increase the percentage of inferential and higher order thinking questions asked

These questions encourage students' reasoning ability, such as hypothesizing, inferencing, analyzing, justifying, predicting. The language used by the teacher or students need not be complex for thinking skills to be exercised. For example, to help students predict, a teacher might read the title of a story and ask, "What will this story tell us?" Teachers need to model critical thinking skills in a step-by-step approach to reasoning.

Recognize that students will make language mistakes

During the second language acquisition process, students make mistakes; this is natural in the process of learning a language. Make sure that the students have understood the information, but do not emphasize the grammatical aspect of their responses. When possible, though, model the correct grammatical form.

Teaching Multilevel Classes

Frequently, teachers have classes with students of mixed ability/proficiency levels. There are several strategies that can help when these situations arise.

Use cooperative learning

This strategy provides for diversity and individuality in learning styles and aids students in the socialization process. Paired and group

activities promote student interaction and decrease the anxiety many students feel when they must perform alone for the teacher in front of the class. It is important for each student in the group to have a task which he or she may accomplish and thus contribute to the activity (e.g., by being recorder, final copy scribe, illustrator, materials collector, reporter). The ideal size for these groups ranges from 2 to 5 students. (See Cochran, 1989, for additional suggestions.) Special consideration should be given to students whose home culture may make them feel uncomfortable participating in cooperative learning activities. While all students should be invited to participate, the teacher should respect the wishes of any student who prefers not to participate.

Incorporate peer tutoring

The students learn and share among themselves with the teacher as a facilitator who checks on the students' understanding and progress. The tutors learn to explain and clarify concepts while the tutored students have the benefit of one-on-one interaction in a non-threatening manner. Some supplemental textbooks, such as *English Skills for Algebra* (Crandall, et al., 1989), are specifically designed as peer instruction materials.

Incorporate process writing

Process writing, though initially implemented in language arts classes, is easily extended into content-area classes. As with all process writing exercises, students begin with pre-writing activities such as viewing a film or sharing the reading of an article that sets the stage for the content area topic. The class may also review key concepts and vocabulary to incorporate into the writing. During the process the students learn about language—specific to the content topic selected—in a meaningful and motivating manner. Word processing programs are particularly useful with process writing and should be used if available. They facilitate the draft and edit stages of the process and also allow students to concentrate on their writing style and organization, not on their handwriting.

Design lessons for discovery learning

These activities allow students to discover new information on their own with guidance from the teacher. Teachers help organize the data and sometimes set out the procedures for students to follow. Students, individually or in groups, discover the results. Problem-solving activities (math) and open-ended experiments (science) are examples of discovery learning.

Use inquiry learning

In these activities, students investigate a topic of their own choosing and teachers act as facilitators. They identify a problem, hypothesize causes, design procedures or experiments, and conduct research to try to solve the problem. These activities work well in science and social studies classes.

Include information gap activities

These activities, which include jigsaws, problem-solving, and simulations, are set up so each student (in a class, or more generally, in a group) has one or two pieces of information needed to solve the puzzle but not all the necessary information. Students must work together, sharing information while practicing their language, negotiating, and critical thinking skills.

Plan lessons around questionnaires/interviews

Designing questionnaires and interviewing respondents are excellent activities for heterogeneous student groups. In the design phase, all students can contribute and evaluate questions for inclusion. In the interview phase, the number of people each student may be expected to interview can be adjusted to the students' ability. Also interviews may be conducted in students' first languages, though responses must be reported in English. A report and analysis of the interview responses may be conducted orally or in writing.

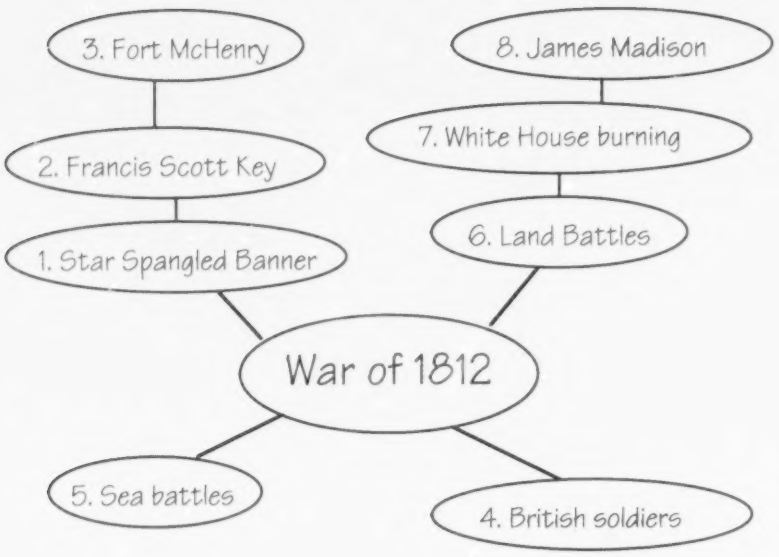
Motivating Students and Providing Background Knowledge

Many LEP students are at a disadvantage in content classes because they lack necessary background knowledge and/or experiential familiarity with the topic at hand. Teachers must plan activities in their instruction to provide some background schema for these students.

Motivate students with semantic webbing

Often used as a pre-writing activity, semantic webbing is also an excellent task for students before they read or discuss a new topic. This more sophisticated version of brainstorming allows students to organize their thoughts and categorize information. Students (with or without the teacher's assistance) may list items first and web later or they may web as they list, creating new strands as categories occur to them. The web is then used by the students as they write on the topic (in the example below, the War of 1812), using the categories to organize their thoughts into paragraph form.

In the following example, students start with the War of 1812 and add on information about the historical event. (The numbers represent the order of students' ideas in building the web.)



Use realia, illustrations, maps, photos

Although the use of realia and other visual materials is a common activity for language classes, it is less frequently found in content classes. These items provide a quick, often non–language-dependent means of introducing students to the lesson topic.

Organize students into small groups, then share with whole class

The teacher may announce the lesson topic for the day and ask small groups of students to list what they already know about it. After a few minutes, the teacher has the groups share their ideas with the class as a whole.

Include "theme" listening activities

Sometimes it is helpful to get students "in the mood" for a topic. The stage may be set by asking students just to listen to a song, a poem, or even a short story and having a brief discussion about it afterwards.

Include discussion of student experiences

While introducing new topics in class, encourage students to share knowledge they may already have about the topic, along with any relevant real-life experiences they may have had.

Begin units with the K-W-L technique

Using a standard form (see sample below), teachers distribute the "Know–Want–Learned" sheet to students individually at the start of each unit. Students complete the first two categories at this point. The "learned" category is completed at the close of the unit.

UNIT THEME: *Food Groups*

What I know about *Food Groups*:

What I want to learn about *Food Groups*:

What I learned about *Food Groups*:

Adapting Traditional ESL Techniques to the Content Classroom

Language teachers providing content-based instruction and content teachers teaching LEP students can modify the following ESL techniques for their lessons.

Bring realia into the lessons

Teachers should use visual displays (e.g., graphs, charts, photos), objects, and authentic materials, like newspaper and magazine clippings, in the lessons and assignments. These help provide non-verbal information and also help match various learning styles.

Do demonstrations

When teachers use actions, they can show the meaning of new words (especially verbs), explain a science experiment, model language functions in the context of a dialogue, etc.

Use filmstrips, films, videotapes and audio cassettes with books

Borrowing films and other audio-visual materials from school/district media centers can help improve a content lesson. It is useful to preview the audio-visual materials before showing them to the class, both for possible language difficulties and misleading cultural information.

Have the students do hands-on activities

Content teachers should plan for students to manipulate new material through hands-on activities, such as role plays and simulations, TPR (total physical response), laboratory experiments, drawing pictures and story sequences, and writing their own math word problems.

Design lessons with music and jazz chant activities

Language teachers frequently use music and chants in their classes. These activities are motivating for students and also help teach English pronunciation and intonation patterns. Songs and chants on subject area topics would work well too. Although some high school students may be reticent to sing aloud in class, all students should be able to do listening activities with music and chants.

Schedule sustained silent reading (SSR) sessions

As educators try to promote more student reading both in and out of school, many teachers (often reading, language arts, and ESL) have incorporated sustained silent reading in their classes. SSR adapts easily to content classes and is particularly effective in middle schools. Once a week, for example, students choose a book or magazine and read silently for 20–30 minutes. The teacher reads too. Teachers with LEP students can stock their classrooms with magazines, picture books, reference books, and trade books on topics they are studying. There need not be any discussion about the reading selections, but some teachers may ask students to fill out reading logs (described below).

Meeting the Students' Cognitive Academic Needs

In many instances, LEP students need coaching and practice to improve their cognitive processing and production of content material. In order to do so, it is important for teachers to build upon the skills and knowledge students have already mastered. Each lesson should include critical thinking and/or study skills. Some of these skills may have been initially developed in the students' first language and will transfer to English.

Examine the topic through the students' listening and speaking skills first; then expand the topic through reading and writing activities

Since the students' oral language skills usually develop more rapidly than their written skills, teachers can check the students' comprehension of the material orally and clarify any trouble spots before introducing reading or writing activities.

Be conscious of different learning styles

Teachers can help meet the different learning styles of their students by varying the presentation and reinforcement of information.

- Alternate activities to address the visual, aural, tactile, and kinesthetic modes of learning:

- Find out if your students prefer to learn from listening to theory or from applying information through hands-on activities;
- When reteaching information, choose a different mode of instruction.

(For more information, see Hainer, *et al.*, 1990.)

Incorporate thinking skill activities

When planning each lesson, teachers must create opportunities to focus on thinking skills. Thinking skills can be developed through teacher-student questioning or through scheduled activities like problem-solving and decision-making. For example:

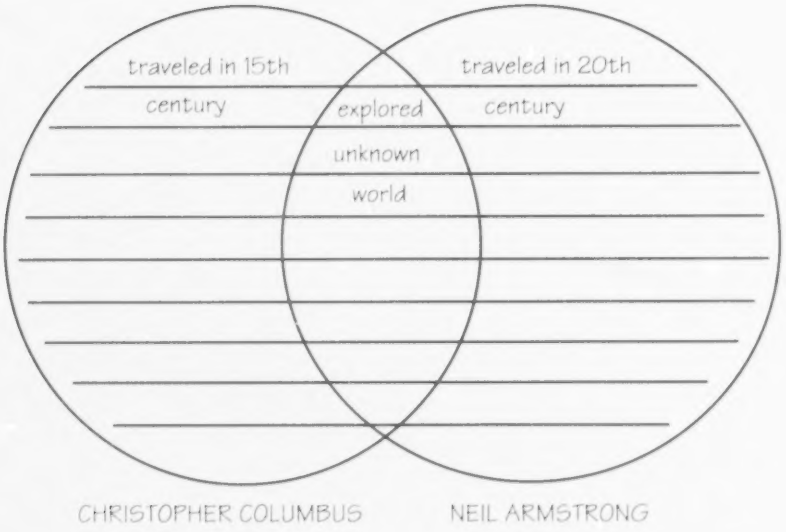
- predicting, categorizing and inferencing are easily addressed in the warm-up and motivation phases of a lesson;
- observing, reporting and classifying, which can be done orally, in writing or pictorially, fit nicely into presentation and application phases;
- sequencing, summarizing and justifying are skills which suit lesson reviews.

Teach study skills

LEP students frequently need assistance in learning how to study. This is especially true of students in middle schools. By teaching them study skills, teachers will give the students an important tool that they can use throughout their academic careers. Show students how to develop and use graphic organizers:

- **outlines** for summarizing, for making predictions;
- **timelines** for organizing and sequencing events chronologically, for comparing events in different settings (e.g., states, countries);
- **flow charts** for showing progression and influences on an outcome, for showing cause and effect;
- **mapping** for examining movement and spatial relations;
- **graphs and charts** for organizing and comparing data; and
- **Venn Diagrams** for comparing and contrasting.

The following is a sample Venn Diagram to use to examine Christopher Columbus and Neil Armstrong. Where the two circles intersect, students write some similarities. Where the circles do not intersect, students write some differences. (Some students may only write a few words; others, several sentences.) This structure can become the draft for an essay comparing and contrasting the two explorers.



Develop the students' ability to use texts and other written materials

Since the acquisition of details within a particular content topic is not the primary objective of the language course, language teachers have more time to develop the students' skills in analyzing:

- **text as a whole**—teachers demonstrate how to use (a) the parts of a book (table of contents, index) to find information and (b) headings, subheadings, and illustrations in chapters to organize and enhance the information
- **passages**—teachers help students learn to draw inferences, synthesize information, make judgments, and provide justifications.

However, because these skills are demanded of the students once they are mainstreamed, content teachers need to incorporate activities to review student knowledge in their areas, too.

Plan activities to train the students in attacking academic tasks, such as research projects, problem-solving, and essay writing

Carefully planned academic activities help students make the transition from language class to mainstream content class. Teachers may plan a library project, for example, and walk the students through it step-by-step, preferably with peer tutors. They may also use process writing methods to help students write essays and research reports.

Present models for writing assignments

Assignments required by mainstream content classes, like research papers and laboratory reports, are of particular interest to LEP students and their teachers. It is beneficial to discuss the model clearly so that the students know how each section is structured and why each section is

important. Students should then be given practice using the model before doing a required assignment with it.

Checking Student Comprehension of the Content

Use strip stories, sentence strips

Teachers write a summary of a lesson or reading passage or write out the steps for solving a math problem or for doing a science experiment on individual strips—either one sentence per strip or several sentences. These strips are distributed, out of sequence, to the students, in groups or as a whole class. The students then organize the strips into the proper sequence.

Sample strips for math:

$2^{1}/_{2} + 3^{1}/_{4} =$

$5/_{2} + 13/_{4} =$

$10/_{4} + 13/_{4} =$

$23/_{4} =$

$5^{3}/_{4}$

Set up dialogue journals

Many school systems are adopting "writing across the curriculum" approaches to encourage and improve student writing. Often teachers will use journal writing in their classes. Dialogue journals go one step further by having teachers respond to student writing in positive and supportive ways. Dialogue journals are not vehicles for editing student work; they are opportunities for students to express themselves. (For further discussion, see Peyton & Reed, 1990.)

Teachers decide how often they want students to write (e.g., daily, twice a week) and how often they will read and comment on the journals. Some teachers will respond to every piece of writing; others will respond once a week or less. The teacher comments may vary in length and depth too. Also for less proficient students, teachers may ask them to start with illustrations in their journals and slowly move into writing. In this way all students in a heterogeneous class can participate.

Some teachers choose to let writing be entirely student-derived; others provide the topics, at least some of the time. Some teachers use dialogue journals for lesson closure or motivation by having students summarize what they learned in the lesson (that day or the day before).

Although dialogue journals are not designed for correcting student work, they can guide teacher instruction. Teachers who see consistent

problems in student writing or in student comprehension of the lesson topics can develop new lessons to address those issues.

Plan activities using drama and role play

Another language teaching technique that works well in the content classroom is using drama. Teachers can ask groups of students to act out an event or topic studied, from the sprouting of a plant to a mock legislative debate in the state government. Teachers may assign roles impromptu or may have groups research and write dialogues before performing. Mime also works well with students from beginning to advanced levels of English proficiency.

Have students complete reading logs

These logs can be used in any content class to reflect reading done from a textbook, a supplemental reader, a trade book or magazine, and newspaper articles. Three categories may be set up on a standard form (see below): What I understood, What I didn't understand, and What I learned.

Reading Title: _____	
What I understood	What I didn't understand
What I Learned:	

Check comprehension with cloze exercises

Cloze exercises, popular for assessing reading comprehension, may be applied to different subject areas. For many clozes, teachers write a summary or take an excerpt (of a reading passage or lesson or class activity) and then delete every xth word. Students then "fill in the blank" with teachers deciding if they will score by an exact word or acceptable word method.

The following is an example of a cloze passage derived from a passage in a civics textbook:

> The First Amendment says we have _____ of religion, speech, the press and _____. We can follow any religion, say _____, write our thoughts, and meet in _____.

Have students do story summaries

As the graphic below shows, this activity has both a written and pictorial component. Students summarize a lesson, reading, or experience (individually or in groups), by drawing illustrations and describing them. A format may look like this:

Encourage students to write headlines

Students can practice their summarizing skills and, as they get more proficient, their descriptive language skills, by writing news headlines for lessons and topics discussed in class. For example, teachers may ask students to write a headline describing the results of a science experiment or to create a title of an imaginary book review of a book they had read.

Let students perform experiments

Teachers may plan performance-based activities to determine student comprehension of the subject matter. A traditional example is the lab practical for science classes. This idea can be easily adapted to math classes, especially those that use manipulatives.

Incorporate the LEA (Language Experience Approach) method

This method has grown out of the movement to teach adults literacy skills, namely to read and write. After students have an experience (e.g., going on a field trip), they dictate to the teacher a summary of what happened. (Teachers usually record on the board exactly what the students say.) Students then work together to organize the written ideas and if desired make corrections. Teachers may copy the dictation to use another day for review, motivation, or even a lesson on editing.

In a class with mixed proficiency levels of students, this activity can work well in small groups. The most proficient student in the group can be the scribe while the others contribute, organize, and edit their work.

Have students write character diaries

Frequently in social studies and from time to time in other subjects the lives of important individuals in the field are studied. Students may read biographies and trade books or watch films and videos and then write a character diary, chronicling a week or two in the life of a particular individual. Students place special emphasis on the setting of the diary as well as the path towards accomplishment that the individual underwent during the week(s).

Developing Lesson Plans

In integrated lessons teachers and students work toward content and language objectives. When developing lesson plans for integrated instruction, it is important to identify both types of objectives and plan activities accordingly. It is often useful to specify critical thinking or study skills to target as well. A teacher's or school district's preferred lesson format can then be used to develop the lesson.

The lesson format presented below includes four phases: 1) warm-up or motivation; 2) presentation of new material, in whole group or small group work; 3) practice and application of new material; and 4) review or informal assessment to check student understanding. Most lessons also contain extension activities to reinforce or extend the concepts covered. A series of lessons thematically linked into units provides for sustained student interest as well as the opportunity to build systematically on prior activities.

The model lesson plans in this section deliberately offer an extensive range of techniques and strategies. They demonstrate the possibilities available to teachers for making integrated language and content more comprehensible. It is important to note that teachers may not have time to incorporate all these suggestions into their lesson plans every day, but should try to vary the activities they plan.

Certain procedures are more critical than others. These are:

(1) selecting principal vocabulary terms to teach as a pre-activity;

(2) providing the opportunity for students to discuss the information and material orally, preferably before any written work is assigned;

(3) designing class activities for student-to-student interaction; and

(4) deciding to use real literature or adapted materials.

The following model lesson outline may be used for integrated language and content lessons. While all lessons should include some language and some content objectives, an individual lesson need not address all the subcategories within. Some lessons may reach content objectives from different subject areas, such as math (use division) and science (calculate average rainfall). Some may have literature; some may

not. Some may focus on reading skills without listening practice. Following the model are two sample lessons illustrating the use of this outline and some of the strategies discussed earlier.

Lesson Plan Format: Integrated Instruction

THEME:

LESSON TOPIC:

OBJECTIVES:

Language Skills
- **Speaking/Listening**
- **Reading/Writing**
- **Structures**

Content Skills

Thinking/Study skills

Key Vocabulary

LITERATURE:

MATERIALS:

- -

MOTIVATION:

PRESENTATION:

PRACTICE/APPLICATION:

REVIEW/EVALUATION:

EXTENSION:

Sample Lesson 1

This model lesson can be used with upper elementary and middle school students. It may take two to three days.

KEY THEME: Agriculture—Important food crops (for American social studies when discussing Native Americans, Pilgrims, or current agricultural resources; for world social studies when discussing any corn-producing country's agricultural system, differences between agricultural and industrial economies, or current events regarding international trade)

TOPIC:	Corn
OBJECTIVES:	
Content:	Recognize different uses of corn (in the US/ around the world) Locate corn-producing areas on a (US/world) map
American studies:	Recognize the role corn plays in American history
World studies:	Recognize corn as an import/export crop
Language:	
Listening/Speaking:	Listen to a poem
Reading/Writing:	Read a poem Complete a comparison chart
Thinking Skills:	Interpret a poem Compare the uses of corn in two countries Solve a problem Use reference materials
Key Vocabulary:	Corn, maize, kernel, stalk, sheath, husk, crop, fodder, grind, cornmeal, import, export, trade
LITERATURE:	"Song of the Cornfield," poem by Gabriela Mistral (Chilean)
MATERIALS:	An ear of corn in husk, individual corn kernels, maps (US/world), black line masters of poem, outline (US states/world) map, outline chart

Note: In some countries (e.g., France, Germany) corn is not used by humans as food; it is only fodder. In other countries (e.g., Mexico, Guatemala), it is a major food staple.

Motivation: Have two students volunteer to close their eyes; give each a kernel of corn and ask them to identify it. Show class the kernels and an ear of corn with the husk to introduce vocabulary, and ask students to share their native languages' name for corn.

Teacher uses realia so students identify corn tactilely. Their interest in the topic is enhanced when they share their native language names for corn.

Presentation: In small groups, ask students to list any experiences they have had with corn—growing, eating, grinding, cooking. Share these lists with the whole class, and look for comparisons in students' experiences.

Students interact and discuss prior experiences with corn.

Read the poem "Song of the Cornfield" to the class and ask students to discuss the images it creates for them and if the poem applies to their experiences with corn. Distribute copies of the poem to small groups, and ask them to complete the worksheet.

As a class, share group responses and discuss the steps of corn production from planting kernels to finding corn in markets/groceries, in cornmeal, or in fodder.

The literature models language in the content context. Students interpret the poem by describing images. Students of different ability levels are able to work in groups to complete tasks

Practice/Application: Distribute the chart to small groups and explain that students will examine corn in two states/countries. As a class, brainstorm additional categories to compare on the chart (*e.g.*, if the country makes corn products—meal, oil, etc.). Then, in small groups, have students choose their two states/countries to examine and complete the chart, using reference materials and textbooks.

Teacher uses a chart to help students organize and compare the information. The chart format allows students to use words and phrases, applying key vocabulary.

Using their group chart, have students write a few sentences in their journals comparing the role of corn in the two states/countries.

Students do individual journal writing.

Review: Display the outline map (US or world) on an overhead projector. As a class, develop a key for the map, and have groups share their information to plot areas of corn agriculture, industry, etc. Then, using arrows to show trade, have students indicate sources of corn for areas that do not grow it.

Teacher checks class comprehension as a whole with group's input. Students also review some map skills.

Home Tasks:

1. Interview parents and neighbors about their experiences with corn—growing, eating, using as fodder, etc.
2. Collect recipes from your culture that use corn.

Extensions:

1. Have students bring in news articles or shopping advertisements that relate to corn.
2. Make a display of corn products (drawings, magazine cutouts, or real objects) such as oil, cornmeal, cornstarch, popcorn, etc.
3. Make popcorn in class; compare a popcorn kernel to a "regular" kernel, discuss role of heat in the changes of state in the kernel.
4. Have students illustrate the poem in the lesson.
5. Prepare a class recipe book of corn favorites.

These tasks and extensions extend and apply the information students learned and shared in class. The activities are varied to meet the academic needs and learning styles of the students. They also involve parents and others outside the classroom.

6. Have students bring in corn dishes to share.

7. (American studies) Read *Corn is Maize* by Aliki. (World studies) Make a bar graph to show top four or five corn-producing countries.

These projects are designed to promote students' creativity while practicing the language and help develop some problem-solving skills.

Long-term projects:

1. Write a short story about the life of a kernel, and draw cartoon illustrations to accompany it.

2. Research the production and distribution of corn that is grown in one country and exported to another. Design a sequence flow chart.

3. Imagine there is a severe drought in a country which produces corn and uses it for food. This country is very poor and cannot buy corn from another country. The leader asks you to investigate several options (three or four) for this country and make a recommendation.

Song of the Cornfield©

by Gabriela Mistral

The ears of corn
Look like little girls:
Ten weeks in the stalks
Tightly held they sway.

They have little golden fuzz
Like that of new-born babes
And motherly leaves
Shield them from dew.

And within the sheath
Like little children hidden,
With two thousand golden teeth
They laugh and laugh without reason.

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Read this poem together and discuss it in small groups:

1. Where is the corn the poet is describing?

2. What does the poet compare corn to?

3. Does the poet like or dislike corn? What words or phrases in the poem justify your response?

4. What role does corn play in your culture?

5. What do you think will happen to the corn described in this poem?

Note: A nice addition would be to use the original Spanish version too.

Sample Worksheet

COMPARING THE ROLE OF CORN

Role of corn	(state/country name)	(state/country name)
name for corn		
source: produced or imported		
uses: food fodder		

Sample Lesson 2

This model lesson plan may be adapted for grades 6-12. If presented in full detail, the lesson may require one to two weeks.

KEY THEME: Environmental Pollution

TOPIC: Littering (Solid Waste)

OBJECTIVES:

Content:
Recognize environmental problems
Identify litter and patterns of littering
Identify human influences on the environment

Language:

Listening/Speaking:
Recite/listen to a dialogue with meaningful content

Discuss environmental issues as a whole class and in small groups

Conduct interviews and report orally

Reading/Writing:
Design a questionnaire, writing questions
Complete a list or chart
Write in a journal

Structure: Question Formation

Thinking Skills:
Analyze problems
Generate solutions
Infer reasons for human actions

Key Vocabulary: Litter, garbage, dump, mess, environment, trash, cause, solution, solid waste, pollution, survey

Materials: Teacher-made dialogue, poster, items of trash (empty soda cans, paper wrappers, broken glass, etc.)

This activity whets the students' interest and visually represents some background information about the topic.

Motivation: *(Before lesson is presented)*

Two weeks before introducing this topic, hang a scenic poster on the wall. Some students may comment on the lovely view or ask vocabulary questions about objects in the scene. Every other day, attach an item that might be considered trash (candy wrappers, an empty box, an aluminum can) to the poster, thus creating a "trash collage." The students may be curious, but do not reveal the purpose.

(To introduce the lesson)

Turn to the "Trash Collage" and ask students what they think it represents. Write student ideas on the board. Finally, through guided questioning, if necessary, lead the students to recognize that the lovely place is being ruined by litter.

All students can participate. Teacher helps them make speech–print connections by writing their comments on the board.

Changing the focus, turn from the poster scene to the local environment, and add some additional vocabulary to the list. Then ask some of the more advanced students to explain why this happens and write comments on the board. Some students may venture consequences of the littering problem.

Presentation: Ask two of the more advanced students to volunteer to come to the front of the class and role play the following dialogue:

LITTERING AT SCHOOL

This dialogue introduces, in an interactive way, some key vocabulary and causes associated with littering.

Student 1: Don't throw that on the ground.

Student 2: Why not? What's the big deal?

Student 1: Our school looks like a garbage dump.

Student 2: So what? Tell one of the younger kids to clean it up.

Student 1: But you littered.

Student 2: Everyone does it. Teachers do it too.

Student 1: You're impossible. Do you know what our school will look like if everyone continues to litter?

On the board, write the headings: PROBLEMS, CAUSES, SOLUTIONS, in chart form. Categorize and expand the vocabulary list with student input. Show students a written form of the dialogue.

Having begun with concrete examples (poster, dialogue), students can now expand and organize their information.

In order to check on comprehension and practice writing questions, have the students take dictation. Dictate the following questions:

This activity incorporates some language practice for the students.

Where are they?
Who is talking?
What happened?
Why is one student upset?
Does this happen at our school?

Have pairs compare their work and ask volunteers to write their dictations on the board. Encourage students to peer edit. Discusses relevant grammar points (e.g., question words, verb-noun positions).

Ask students to think of additional questions about the dialogue. Write the student-dictated questions on the board. Work as a class to edit errors.

If desired, add questions, such as "Why is there a problem?" (cause) or "What can you do?" (solution).

This paired activity allows for oral language practice in the context of the lesson topic.

Application 1: Have pairs role play the dialogue "Littering at School" and discuss the vocabulary and issues together. Then have pairs ask each other the class-generated questions (more advanced students should answer first.).

Students work individually at first, then with peers.

Review: After this structured conversation, ask students to write ten questions and answers about the topic (littering). Before they hand it in, encourage students to peer edit.

This task applies the topic directly to their lives.

Home task: For homework, have students write in their journal about the trash they see as they go to and from school for several days. As this task continues, expand the vocabulary list under PROBLEMS and put it on a poster or chart to hang in the room. Make two other posters, one with CAUSES and the other with SOLUTIONS as well.

The group work offers all students a chance to participate.

Application 2: In small groups, have students discuss the causes of littering, then share ideas with the class. Write them on the CAUSES poster. Then ask groups to consider solutions. Share their suggestions and write on the SOLUTIONS poster.

This activity reinforces the language structure objective.

Next, have small groups design a questionnaire to interview classmates, teachers, neighbors, family, and friends. The questionnaire should be limited to five questions. If needed, help groups plan their questions, but do not provide them with a full list. Possibilities include:

Does litter bother you?
Do you litter?
What do you throw away as litter?
Why do people litter?
Who is responsible for solving this problem?
What can be done about this problem?

This task encourages interaction with non-classmates on the topic and may provide clarification practice, as students explain their task to others.

Home task: Have students conduct a survey for three days, each interviewing 10 people. (If they interview non-English speakers, they may ask questions in the native language but should write responses in English.)

Each group contributes to the whole class. Optional presentations allow each group to choose the one best suited to their learning styles and academic skills.

Follow-up and Extension: Have students share this information in their groups. Have recorders in the group organize the results of the survey and a representative of the group reports to the whole class. Help the whole class find ways of organizing and presenting the results of the survey. (Some students may list the results on posters, others may do a chart and quantify the responses. Some may prepare an oral report or a debate between individuals who litter and those who don't. Other students may create a role play or drama. Some may design a visual display or collage, highlighting *before* and *after* scenes.)

Have students write a composition. Display the papers and, if appropriate, encourage some students to submit their work for publication in a school/class newspaper.

Long-term Projects: Expand this introduction to individual generation of and influence on solid waste pollution to heighten the awareness of students to other sources of solid waste (industrial, agricultural, municipal) and methods of disposal. Design additional lessons to help students research sources of solid waste in their communities and learn about local disposal methods, such as dumping, burying, burning, recycling, etc. Students may want to form action groups to decrease solid waste pollution in their towns.

These projects further students' problem-solving and study skill development.

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